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Interview with Ruth Kobayashi

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Ruth Kobayashi

...Exactly what we're doing. What we're doing now is planting the poinsettia sheets, we have each cross labeled and they're counting the number of seeds that we have per cross so it's a little bit of a double checking system, we check with the list and then we go through and then we plant and each tray, we plant them by tray as we go down the line so Elena is now kind of double checking to make sure that our labels and our cross and our seed packets all match and that we're planting in order. What we'll be doing after our seeds germinate and sprout we will transplant so its critical for us not to mix the seeds and our crosses with each other so everything in our program is pedigreed and in order for us to keep the integrity of the program we have to make sure we're not putting the wrong seed packet with the cross label and all of that kind of jive, and the program builds upon itself, 75 years of poinsettia growing and 40 years of poinsettia breeding and so as I said before, just to keep the integrity of the program it's critical for our future to keep things in order.

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We hybridize cross poinsettias during our traditional Christmas season, that's what generates all of the seedlings here. We will bloom or seed about 10-15 thousand per year. And we'll cross on a few thousand plants represent about 500 different cross combinations today, and it would vary from year to year how many different cross combinations we would make. And that's what generates all of these different seeds so each white peg you see is a different cross combination and varying number of seed per cross combination represents both the number of parents we use per cross or the fecundity of the plant, how well it actually produces seed. So we'll have varying numbers where we could have thousand of seed in one cross

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combination or two seed in one cross combination and since all of our cultivators that you see today are what we call single plant selections, if each cross doesn't breed true, the cross that has two seed could be that great cross that produces the next freedom red, major market poinsettia for the future so I don't limit the kind of crosses we make to ones that produce many seeds we try to get the best cross combinations together and try very hard to recover those two seed if that's the cross combination we want to make. And that's why pedigreeing is important, it helps us decide which cross combinations just and some genetics that we're building on to develop the next generations of poinsettias.

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Yes, we deliberately choose some as females and based on their fecundity and also their combining ability as a female versus a male. We have done some studies on reciprocal crossing and the results are varied so a lot of it is just historical record keeping and knowing what the parents are. And that's we generally, that's about the limit we can physically look at today. We can generate with a number of crosses we make we can generate a lot more seed. If we were in the seed production business, we could generate a lot more seed. But about 15,000 is about all we can physically evaluate. We have growing space and there are different ways we could actually grow the plant, so it's not necessarily a space constraint, it's really an evaluation constraint, that it takes time for us to critically look at each individual poinsettia. And every single one of these seedlings that pop up will look different. And so for us to give each kind of kid their evaluation period, it's necessary for us to limit the amount we look at.

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When we're evaluating the seedlings or how do we decide which seeds we plant? When we evaluate the seedlings, we're looking at general horticultural qualities of how vigorous is it, how well it roots, or because everything is vegetatively propagated, we look at flower timing, the general, the bigger the height, general kind of characters that we look at for growing properties, also disease tolerance, we'll say, whether or not it comes down and dissolves under disease pressure, normal greenhouse disease pressure or if it survives quite well. Any kind of plant deformity that inhibits its growth or anything like that we'd have to cult. Those are kind of the general horticulture qualities. And then we look at more

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aesthetic qualities, how big the bloom is, what color red is it or different color is it, the leaf color, leaf pattern, the brack pattern, all of those kinds of things, the aesthetic qualities have very little to do with how well the plant grows, but it has a lot to do with whether the consumer will buy it.

What would I be pleased with if I found commercially viable? Oh, how many do we save? It's less than one percent. On the first pass we will have about, yeah, the first year, when we're evaluating the thousands of seedlings and look at each individual one, we probably select near one percent of the population, but between half a percent and one percent of the population can get selected and that's on average. We have good years and bad years. But to actually make it commercially viable, we're at less than one tenth of one percent. We do look at a lot of things and that's actually part of it is because the program has been so successful, you always have to improve on yourself. If you have the best plants on the market you're trying to improve upon yourself, the more gains you make, the harder it is to improve. So you're working with a fairly in one perspective narrow germ plasm because it's only in one species and in another respect there's a tremendous amount of diversity within this one species. And so as we try to improve and continue to improve upon ourselves for forty years, it gets a little bit more and more challenging getting more horticulture traits in because we have a lot of good stured plants, plants that last a lot longer as far as post production so the consumer can have them in their home. A lot longer than they used to have them and it wasn't very long ago that people would buy a poinsettia not more than a week before Christmas because it didn't last as long in the home and now people will typically purchase a poinsettia much earlier because it lasts much longer, you can buy it at the beginning of December and it goes past Christmas and some people will say that they had their poinsettias through April and they look fine. That is a function of plant breeding and selection that Franz who was the plant breeder here had developed through hybridization and making good selections and good cross combinations.

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Bioengineering maybe. It might be quite sometime down the road just because of the expense. And as a business we can do things just as interesting and unique another way that's a little bit more cost practical. We do use I think what people think of biotech today. As far as we're starting a market assisted breeding program, things that we're using. We

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use tools, present day tools, to help us do what we do today. What we don't do transformation or what people would say putting one gene from a plant and putting it into poinsettias. All we have the technology to do that today, we just haven't figured out the cost benefit ratio for that. And when we do find something that makes sense for us to approach, then we'll probably approach it that way, but as far as the gene pool is concerned. We haven't done as much as I would like to incorporate just germ plasm from different species, other related uphorbias. Because one their not that easy to incorporate, but we don't have to go through bioengineering to do it, and so we can get a lot of interesting traits and different looks. One of the great things about flower breeding, as opposed to vegetable breeding or cereal breeding is that we can utilize the novel and the unique because we're interested in the aesthetics, what was once thought of being strange is now thought of being great and different. So with the marketplace changing, we can take advantage of that, we don't have to worry about food source and changing the nutrition of our poinsettia, as far as a secondary food source. Who's going to eat it? as well as does it, we're not as much interested in how many berries would be on the plant, we're interested in how pretty the flower is. So our window in much wider, much more exciting, much more interesting to me because we get to keep all that and we get to develop it and kind of show it off. One of the things that someone told me about, which I truly believe and I wish I could attribute the quote to the right person if it was Bob Stuart or I can't exactly tell you who it was. And he said, "You know, most people don't know what they want as far as a new flower, cause they haven't seen it yet." He would often ask me if you had the perfect poinsettia, what would it be? And quite frankly, I don't know because I haven't seen it yet. It will always be something that I haven't seen that would be perfect I think. You can always point at something and make an improvement on it. a better color red. A bigger color flower. All of that has scope but once, it's something we haven't imagined yet and that's kind of the joy, and really the greatest part about being in flower breeding is that you get to explore all that and you get to use it.

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From other species. Actually, if we had all the science and information available, besides a different look since I haven't seen it yet, I can't really explain, I'd really actually be looking for something that's easier for the home grower to grow and handle. What does that mean? It's much more tolerant of not being watered or being over watered, it's much more

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tolerant of very high heat conditions and very cold conditions, it's doesn't grow to fast or grow to slow. All of those things make a plant easier, not for the professional grower to handle, but for the homeowner to handle, is what I would try and incorporate. Because the joy of all this is actually for the consumer, the person that is actually bringing this home, wanting to be successful with it. you go to the store and you buy this beautiful plant, you want it to be just as beautiful in your home and stay that way. And I think that's what will get people more excited about buying flowers and doing more gardening, it's easier, everyone can participate, I can grow it on the patio, I can grow it if I have an acre of land, I live in Minneapolis or I live in Miami. We all get to use the same plant, we all have a bunch of colors to choose from. That's what I'd be looking for.

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If it's a commercial variety, then it doesn't work that way. Because that package doesn't encompass all of the say qualities, like I said before, the novelty factor something different that you see, may be quite attractive, such as the curly, winter rose type, there's no way to actually quantify something like that and if you just went and took out your palm pilot and just punched in a bunch of numbers and said okay, it has this and this, you'd never select the winter rose. Currently, one of the fastest growing varieties that we have in terms of sales. So that kind of thing is just impossible for us to do that on a data entry level because the qualities we don't know how to objectively track. And it's how the package is put together so that one of the things that is currently in favor is the darker foliage and it has been for some time, but for many years we had more of a medium green leaf color which is quite acceptable and makes for a very nice plant. If we came out with a new variety that had all of the beautiful qualities that we look at in a flower or the brack presentation and it had medium green leaves, today we would probably rate that lower if we were just looking on a data base number scale rather than looking at the plant and said wow, this package, all of the things together look great together, maybe if it had darker leaves, I'm not sure that it would look any better. But the package works well, and that's quite subjective and that's the experienced eye.

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Yes. Definitely true. Here at the ranch, there is input from the sales and marketing staff as to what they think would be good and interesting. Most times, so far, they like a lot more than the breeder is leaded to believe. Just from the standpoint of it looks really interesting and it looks very nice as is roomy but they don't live with the plants and they don't know it's flaws, that the characters that I think are not consumer ready, we'd like to improve on it before we send it on into the marketplace. Because we know we can, and it's a matter of timing, trying to reach the market at the right time, there's proably market and sales opportunity today, but we want to have a great plant. I don't want a nice looking plant, I want a great plant. Like I was saying before, if you have a plant that the consumer can't handle, it's not gonna grow well for them, they can't really do much with it, or it doesn't last very long. As soon as they bring it home, it starts to fade, their not going to be pleased. It looks great in the greenhouse, and maybe the first few days in the store and it flies off the shelf and their not going to be pleased with it. That's the part we know, we live with the plant, we work with the plant, we put it through all these kind of post production where we'll take it out of the greenhouse and put it in artificial light, mimic and office or home, we'll keep it in there for months, we'll watch it go through a whole life cycle and only after that do we say it's got all of these great aesthetic qualities, all these great horticulture qualities, and all these great consumer qualities, now it's ready. When we have the marketing group and the sales group, and I like to have people who are not in the industry at all, come through and say this is the stuff that I like. And that gives me more insight as to what looks good, what's the aesthetic part, and the horticultural part and the post production part we'll work on. But aesthetics is one of those very subjective things. Beauty is in the eye of the beholder.

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There are certain characters. The plants have character. Each plant and it's character will have their own kind of unique nuance. People have asked me, I've walked through the greenhouse and say that's this number or that's that number and people are looking at me saying how do you remember, it is thousands that you go through there's hundreds of numbers, we have accessions that we get plants in from other people or from our commercial production side of our business, we'll get things to look at from natural sporting or things that just look different and just to kind of keep track of all that and the way you do it is that each one has character and even though you don't make it known to the plants, you have your favorite, one that

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attracts your eye and there is something about that, in people we call it charisma, I'm not sure what to call it in plants, but that's pretty much what it is. You kind of notice that character in the plant, and it has that perky look to them, some look very majestic, it's just a feeling that you scribe to the plant, and they all have their little characters to them and as Paul was saying, it just breaks my heart they're just so beautiful. In the greenhouse and we go and we put them through a post production treatment and we evaluate them and we put them in and put them in a box, send them away, and they come back all bruised and they just don't take handling at all. It just breaks my heart. I know that that clone, that variety won't be around next year because I can't afford to hold on to it no matter how beautiful it is. You get emotionally attached.

These are like family, like friends and it's really hard, even when we go through at the end of Christmas, and we have to we don't sell our plants, we throw them out after the season's done, after they've shown us all of our glory. And I can't be in the greenhouse for that. It's thousands of plants that need to go to the dumpster. We have production crews and labor crews that go through that and I go into the greenhouse and I see that it's getting started and I leave because it's just too hard to take.